

10/571264

1 IAP20 Rec'd PCT/PTO 09 MAR 2006

A METHOD OF MAKING A SPRING WIRE, AND A WIRE MADE BY THE

METHOD

5-24-07 1 This application is a 35 USC 371 of PCT/FR04/02273, filed 09/08/2004.

The present invention relates to wire substantially in the form of a cylinder for making springs,

5 advantageously of the helically-wound cylindrical type, or the like, and also torsion bars or the like that find applications in numerous industrial fields, and are particularly advantageous for making suspensions for motor vehicles, trucks, rail vehicles, or the like.

10 There exist substantially cylindrically-shaped wires for making springs, the wires including at least a first plurality of helically-wound fiber layers, said layers being situated on one another and impregnated by a matrix, the fibers generally being glass fibers, and the
15 matrix generally being a polymerizable resin of the epoxy, vinylester, or polyester type.

These spring wires are very advantageous since they present the advantage of a much smaller ratio of weight over volume occupied than applies to metal wires used for
20 making springs enabling identical resilient forces to be delivered.

An object of the present invention is to provide an industrial and particularly inexpensive method of providing an improvement to wires of the above-defined
25 type as are known in the prior art, to give them a modulus of elasticity of much greater value, and to do so for wires of the same section.

The present invention also provides a spring wire obtained by implementing the method of the invention.

30 More precisely, the present invention provides a method of making a spring wire comprising at least one layer of a fiber wound helically on a cylindrical "primary" portion of diameter equal to D, the tangent to said helix making an angle relative to the axis of the
35 primary portion having a value β , said layer also being suitable for being bonded to the primary portion by a matrix, the fiber, once wound around the primary portion,